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Ministry of Health
مستشفى القنفذة العام

Policy & Procedure (P&P)

Policy Title :		
Extending the Blood Supply in Blood bank during disasters		
Department	Index No.	Scope
Laboratory & Blood Bank	LAB-130	All blood bank staff+ medical staff
Issue Date	Revision NO	Effective Date
27/7/1441	NEW	5/08/1441
Review Due Date	Related Standard NO.	Page Number#
5/08/1443	CBAHI LB-56	5

01. Policy:

The blood bank in collaboration with the medical staff will cooperate to maintain enough blood and blood components inventory and take corrective action to maintain the established level.

Good inventory management includes having an adequate supply for patients consumption with limited wastage due to outdate.

02. Definition :

The minimum inventory level: is the estimated of blood and blood components taking into consideration the availability of adequate supplies of blood for routine and emergency situations.

03. Purpose :

The blood bank has to maintain a stock of blood components to ensure adequate supply for hospital patients. Stock should be large enough to meet the demand of our hospital but with minimum wastage due to outdate.

The purpose of this policy is to provide guidance in ensuring optimum availability of blood and blood products by determining minimum required inventory level of blood and blood products and determining daily inventory level of blood and blood products.

In cases of disasters or outbreaks, the medical staff should help the blood bank by reducing the blood transfusion requests and limit them to emergencies only.

04. Procedure :

04.1. Role of the medical staff : the requesting physician

4.1.1. Consider encouraging the use of O-negative red blood cells (RBC) only for Rh negative patients, women of childbearing age and for patients with the anti-D antibody.



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Don't transfuse O negative blood except to O negative patients and in emergencies for women of child bearing potential with unknown blood group.

O negative blood units are in chronic short supply due in part to overutilization for patients who are not O negative.

O negative red blood cells should be restricted to:

(1) O negative patients;

or (2) women of childbearing potential with unknown blood group who require emergency transfusion before blood group testing can be performed.

04.1.2. Don't transfuse more units of blood than absolutely necessary.

Each unit of blood carries risks.

A restrictive threshold (7.0-8.0g/dL) should be used for the vast majority of hospitalized, stable patients without evidence of inadequate tissue oxygenation (evidence supports a threshold of 8.0g/dL in patients with pre-existing cardiovascular disease).

Transfusion decisions should be influenced by symptoms and hemoglobin concentration.

Single unit red cell transfusions should be the standard for non-bleeding, hospitalized patients.

Additional units should only be prescribed after re-assessment of the patient and their hemoglobin value.

04.1.3. Don't transfuse red blood cells for iron deficiency without hemodynamic instability.

Blood transfusion has become a routine medical response despite cheaper and safer alternatives in some settings.

Pre-operative patients with iron deficiency and patients with chronic iron deficiency without hemodynamic instability (even with low hemoglobin levels) should be given oral and/or intravenous iron.

04.1.4. For stable non-emergency patients, orders for two or more units at one time may be reviewed to determine if fewer units/one unit may be adequate to treat the patient (give one, then reassess).

04.1.5. Consider crossmatching a unit of RBC to more than one patient.

04.1.6. Consider to give half the dose for platelets transfusion.

04.1.7. Consider the use of A plasma for massive transfusions.

04.1.8. Consider the use of alternative blood groups.

04.1.9. Consider taking steps to switch from O RBC to type-specific RBC transfusions in massive transfusion protocols.

04.1.10. Don't routinely use blood products to reverse warfarin.

Patients requiring reversal of warfarin can often be reversed with vitamin K alone. Prothrombin complex concentrates or plasma should only be used for patients with serious bleeding or requiring emergency surgery.

04.1.11. Don't perform serial blood counts on clinically stable patients.

Transfusion of red blood cells or platelets should be based on the first laboratory value of the day unless the patient is bleeding or otherwise unstable. Multiple blood draws to recheck whether a patient's parameter has fallen below the transfusion threshold (or unnecessary blood draws for other laboratory tests) can lead to excessive phlebotomy and unnecessary transfusions.

04.1.12. help the blood bank supply by sending replacement donations (whole blood or platelets apheresis)



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4.2. The role of blood bank staff

4.2.1. The calculation of average daily use estimate:

Facilities that transfuse on a daily basis may calculate daily blood usage by the following method:

- Determine the total use over 6 months
- Divide the total use by the number of days in the period covered.
- Determine the percentage of each of the blood product by ABO and Rh group used during one or more representative months.
- Multiply the average blood use per day by the percentage of blood use by group.

4.2.2. Calculating minimum inventory

Determine the minimum inventory level by multiplying the daily use by the 3 days of blood supply.

4.2.3. Handling of blood shortage:

Daily by beginning morning shift the inventory status should be determined as follow :

- Cancel all crossmatched units which exceed 72 hours since crossmatching date and add those to the available inventory
- Calculate all available blood components and record in the daily inventory sheet.
- Calculate all component collected and prepared in the last days and add to the available inventory
- Submit the final inventory report to the blood bank physician to determine the level of inventory and necessity of any corrective action
- Upon reaching the predetermined minimum inventory the following corrective action should be taken to increase the inventory level according to availability and necessity
- Arranging mobile camps in cooperation with administration of Laboratories and Blood banks.
- Contacting blood donors and donors enrolled in the list of blood bank friends
- Extending the donation time during work days and during week ends
- Encouraging hospital visitors and staff to donate blood by announcing in hospital paging system
- Contacting other blood banks in the regions or outside the region.
- Reduce crossmatching hold time
- In case of needing specific blood groups or phenotype , donors with required blood group or phenotype could be recruited specifically
- Platelet inventory could be increased by collecting platelet by apheresis
- Upon reaching the predetermined critical inventory , the following corrective action should be taken to increase the inventory level and ensure the use of available units to only urgent cases.
- Continue following the above mentioned means
- The blood bank physician may request that elective surgical procedure be post poned after informing the medical director (chairperson of Blood utilization committee, the head of surgery and OR department)
- The blood bank physician will review all blood components requests prospectively to ensure the urgency of units needed and contact the treating physician

04.3. Corrective action to reduce outdated units:

- Blood products should be arranged chronologically and blood group wise and issue by first in first out
- Select donors with required blood types only
- Request donors of blood types not required to return at a later date.



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- Contact area hospitals and ask if they could use some component if there is an abundance expiring within a week.

04.4. Inventory status

04.4.1. PRBCs Inventory:

	O+	A+	B+	AB+	O NEG	A NEG	B NEG	AB NEG	TOTAL
OPTIMAL	60	35	35	6	8	6	6	4	160
MINIMUM	40	15	15	2	4	4	4	1	85
CRITICAL	15	6	6	1	2	2	2	1	35

04.4.2. FFP Inventory:

	O+/-	A+/-	B+/-	AB+/-	TOTAL
OPTIMAL	50	50	50	60	210
MINIMUM	20	25	25	30	100
CRITICAL	10	10	10	20	50

04.4.3. Platelets Inventory:

	O+/-	A+/-	B+/-	AB+/-	TOTAL
OPTIMAL	10	10	10	5	35
MINIMUM	5	5	5	3	18
CRITICAL	3	3	3	1	10

04.4.4. Cryoprecipitate Inventory:

	O+/-	A+/-	B+/-	AB+/-	TOTAL
OPTIMAL	20	20	20	20	80
MINIMUM	15	15	15	15	60
CRITICAL	10	10	5	5	30

05. Responsibilities :

05.1. All Blood Bank Staff of Al-Qunfudah General Hospital.

05.2. All Medical Staff



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06. Equipment & Forms

06.1. Daily inventory form

07. Attachment :

LAB-088: Handling of blood shortage

08. Reference

- 08.1. Disaster management : The Technical manual of the American Association of Blood Banks, 18th edition, 2014
- 08.2. Choosing-Wisely-Five-Things-Physicians-and-Patients-Should-Question. AABB, 2014
- 08.3. Tips-for-Hospitals-Extending-the-Blood-Supply, AABB, 2020
- 08.4. Strategies-for-Scarce-Resource-Situations, Northern healthcare response network, 2015
- 08.5. Recommendations on the Use of Group O Red Blood Cells, AABB, 2019

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